WHAT IS CLAIMED IS:

1. A loadlock comprising:
a first support structure adapted to support a first substrate; and
a cooling plate adapted to support a second substrate.

2. A loadlock as in claim 1, wherein said cooling plate is disposed below said first support structure.

3. A loadlock as in claim 1, further comprising a second support structure disposed below said first support structure, said second support structure being moveable relative to said cooling plate.

4. A loadlock as in claim 3, wherein said cooling plate is positioned to accept a processed substrate from said second support structure.

5. A loadlock as in claim 1, wherein said cooling plate includes at least one groove on its surface.

6. A loadlock as in claim 5, wherein said cooling plate further includes at least one coolant carrying channel.

7. A loadlock as in claim 1, wherein said cooling plate includes an anodized surface region.

8. A loadlock as in claim 3, further comprising an elevator to control the vertical position of said first support structure and said second support structure.

9. A loadlock as in claim 8, wherein said second support structure extends through said cooling plate.

10. A loadlock as in claim 8, further comprising an unprocessed substrate on said first support structure and a processed substrate on said second support structure.

11. A loadlock as in claim 10, wherein said unprocessed substrate comprises a glass material.

12. A loadlock as in claim 1, further comprising a heating device disposed above said first support structure.

13. A loadlock as in claim 8, further comprising a moveable cassette which includes said first support structure and second support structure.

14. A loadlock as in claim 13, further comprising a loadlock body portion which defines a first aperture adapted to accept unprocessed substrates into said loadlock and a second aperture adapted to receive a processed substrate.

15. A loadlock as in claim 14, wherein said elevator is adapted to elevate said cassette, and said cooling plate is coupled to said loadlock body portion.

16. A loadlock as in claim 13, wherein said cassette further comprises a first plate and said first support structure is coupled to said first plate.

17. A loadlock as in claim 16, wherein said first plate and said cooling plate each include a first surface region having a first emissivity and a second surface region having a second emissivity, said second emissivity being greater than said first emissivity.

18. A loadlock as in claim 16, wherein said cassette further comprises a second plate located below said cooling plate and said second support structure is coupled to said second plate.

19. A loadlock as in claim 18, wherein said cassette further comprises a third plate located above said first support structure.

20. A loadlock as in claim 19, further comprising a heating device located above said third plate.

21. A loadlock as in claim 16, further comprising a filter disposed above said first support structure.

22. A loadlock comprising:

a chamber body;

a first support structure in said chamber body adapted to support one unprocessed substrate;

a second support structure in said chamber body adapted to support one processed substrate;

said first support structure being disposed above said second support structure;

an elevator to control the vertical position of said first support structure and said second support structure;

a first aperture to permit insertion of an unprocessed substrate into said loadlock and removal of a processed substrate from said loadlock;

a second aperture to permit removal of an unprocessed substrate from said loadlock and insertion of a processed substrate into said loadlock;

a cooling plate including a surface adapted to support a processed substrate thereon; and

a heating device located above said first support.

23. A loadlock as in claim 22, wherein said second support structure extends through said cooling plate when positioned to support one processed substrate.

24. A loadlock as in claim 22, wherein said first support structure and said second support structure are movable relative to said cooling plate.

25. A loadlock as in claim 24, wherein said cooling plate is attached to said chamber body.

26. A loadlock as in claim 25, wherein said cooling plate has a plurality of holes therein to permit said second support structure to move therethrough.

27. A loadlock as in claim 22, further comprising a middle plate between said first support structure and said second support structure.

28. A loadlock as in claim 27, wherein said cooling plate includes at least one structure extending therefrom and said middle plate includes at least one opening sized to accommodate said at least one structure extending from said cooling plate.

29. A loadlock as in claim 27, wherein said first support structure is connected to said middle plate.

30. A loadlock as in claim 27, wherein said middle plate includes a cooling layer and an insulation layer.

31. A loadlock as in claim 22, further comprising a heating element disposed above said first support.

32. A loadlock as in claim 22, wherein said first support structure comprises a plurality of pins and said second support structure comprises a plurality of pins.

33. A semiconductor processing system comprising:

at least one processing chamber;

a transfer chamber connected to said at least one processing chamber; and

a loadlock connected to said transfer chamber, said loadlock comprising:

a single substrate upper support and a single substrate lower support;

a transfer aperture to transfer a single substrate between said transfer chamber and said loadlock;

an elevator to raise and lower said single substrate upper support and said single substrate lower support; and

a cooling plate disposed in said loadlock and positioned to accept a singl substrate from said single substrate lower support.

34. A semiconductor processing system as in claim 33, wherein said single substrate lower support extends through said cooling plate.

35. A semiconductor processing system as in claim 33, wherein said loadlock furth r comprises a load/unload aperture through which an unprocessed substrate may

be loaded into said loadlock and through which a processed substrate may be unloaded from said loadlock.

36. A semiconductor processing system as in claim 35, wherein said loadlock further comprises a transfer aperture through which an unprocessed substrate may be delivered from said loadlock to said transfer chamber and through which a processed substrate may be delivered from said transfer chamber to said loadlock.

37. A semiconductor processing system as in claim 35, wherein said loadlock further comprises a heating element.

38. A semiconductor processing system as in claim 36, wherein said loadlock further comprises a heating element and said heating element is disposed above said single substrate upper support.

39. A semiconductor processing system as in claim 38, wherein said loadlock further comprises a middle plate disposed above said cooling plate and below said heating element.

40. A semiconductor processing system as in claim 39, wherein said single substrate upper support is connected to said middle plate.

41. A semiconductor processing system as in claim 40, further comprising a gas inlet to supply a gas to said loadlock.

42. A semiconductor processing system as in claim 41, wherein said loadlock includes a top surface, said gas inlet being located along said top surface of said loadlock.

43. A semiconductor processing system as in claim 35, further comprising at least one processing chamber coupled to said transfer chamber, said at least one processing chamber consisting of at least one chamber selected from the group consisting of a physical vapor deposition chamber, a chemical vapor deposition chamber, an etching chamber, and a heating chamber.

44. A semiconductor processing system as in claim 43, further comprising:

an external substrat supply station comprising:

a first robot to deliver substrates to said loadlock and pick up substrates from said loadlock;

at least one unprocessed substrate cassette to supply unprocessed substrates to said loadlock; and

at least one processed substrate cassette to accept processed substrates from said loadlock.

45. A semiconductor processing system as in claim 44, further comprising a second robot to transfer a substrate between said loadlock and said transfer chamber.

46. A semiconductor processing system as in claim 36, further comprising:

a transfer chamber robot to transfer a substrate between said loadlock and said transfer chamber;

at least one processing chamber coupled to said transfer chamber, said at least one processing chamber consisting of at least one chamber selected from the group consisting of a physical vapor deposition chamber, a chemical vapor deposition chamb r, an etching chamber, and a heating chamber.

47. A semiconductor processing system as in claim 46, further comprising a loadlock delivery robot to transfer an unprocessed substrate into said loadlock and remove a processed substrate from said loadlock.

48. A semiconductor processing system as in claim 33, further comprising a substrate disposed on said cooling plate and a cooling gas comprising helium disposed in said loadlock.

49. A semiconductor processing system as in claim 48, wherein said cooling gas further comprises nitrogen.

50. A loadlock system comprising:

a loadlock chamber;

a support structure disposed in said chamber, said support structure adapted to accept a single substrat from a robot arm;

a cooling plate disposed in said chamber; said cooling plate positioned to accept a single substrate from said support structure; and

wherein said support structure is movable relative to said cooling plate.

51. A loadlock system as in claim 50, wherein said cooling plate includes at least one aperture through which said support structure may extend.

52. A loadlock system as in claim 50, further comprising a heating device disposed in said loadlock chamber, said heating device being located above said support structure and said cooling plate.

53. A loadlock system comprising:

first means for supporting only a single unprocessed substrate;

second means for supporting only a single processed substrate;

said first means being located above said second means; and

delivery means for delivering a processed substrate to a cooling plate in said loadlock system.

54. A loadlock system as in claim 53, further comprising cooling means for cooling said substrate on said cooling plate.

55. A loadlock system as in claim 53, further comprising heating means for heating a substrate, said heating means disposed above said first support.

56. A method for using a loadlock comprising:

delivering an unprocessed substrate to an upper support structure in said loadlock through an opening in said loadlock;

closing said opening and evacuating said loadlock;

transferring said unprocessed substrate to a chamber outside of said loadlock;

delivering a processed substrate from said chamber outside of said loadlock to a

lower support structure in said loadlock;

delivering said processed substrate from said lower support structure to a cooling plate in said loadlock; and

cooling said processed substrate.

57. A method as in claim 56, wherein said cooling includes introducing a gas into said loadlock and filtering said gas as it enters said loadlock.

58. A method as in claim 56, wherein said cooling includes introducing a gas comprising helium into said loadlock.

59. A method as in claim 56, wherein said cooling includes introducing a gas comprising a helium gas and a nitrogen gas into said loadlock.

60. A method as in claim 59, wherein said gas includes said nitrogen gas present at a pressure of about 754 to about 759 torr and said helium gas present at about 1 to about 6 torr.

61. A method as in claim 58, wherein said gas consists essentially of 757 torr nitrogen and 3 torr helium.

62. A method as in claim 56, further comprising heating said unprocessed substrate in said loadlock prior to transferring said unprocessed substrate to said chamber outside of said loadlock.

63. A method as in claim 56, further comprising heating said unprocessed substrate in said loadlock prior to transferring said unprocessed substrate to said chamber outside of said loadlock.

64. A method as in claim 56, wherein said cooling said processed substrate includes providing a cooling fluid to said cooling plate to transfer heat away from said cooling plate.

65. A method as in claim 56, wherein said delivering said processed substrate

to said cooling plate comprises lowering at least a portion of said lower support structure through said cooling plate so that a lower surface of said processed substrate is placed onto an upper surface of said cooling plat .

66. A method as in claim 65, wherein said lowering at least a portion of said lower support structure through said cooling plate comprises lowering a top of said lower support structure to a position lower than said upper surface of said cooling plate.

67. A method as in claim 56, further comprising positioning a second plate above said processed substrate at a position so that heat from said processed substrate is transmitted to said second plate.

68. A method as in claim 56, further comprising supplying a cooling fluid to cool said second plate and said cooling plate.

69. A method for processing substrates comprising:

delivering an unprocessed substrate to an upper support structure in a loadlock through a first opening in said loadlock;

closing said first opening and evacuating said loadlock;

delivering said unprocessed substrate to a chamber outside of said loadlock through a second opening in said loadlock;

delivering a processed substrate from said chamber outside of said loadlock to said lower support structure through said second opening in said loadlock; and

delivering said processed substrate to a cooling plate in said loadlock.

70. A method as in claim 69, wherein delivering said processed substrate to said cooling plate comprises lowering said lower support structure relative to said cooling plate.

71. A method as in claim 69, further comprising:

cooling said substrate on said cooling plate;

raising said lower support structure relative to said cooling plate to remove said process d substrate from said cooling plate; and

removing said processed substrate from said loadlock through said first opening.

72. A method as in claim 71, further comprising venting said loadlock prior to raising said lower support structure to remove said proceed substrate from said cooling plate.

73. A method as in claim 72, wherein said venting comprises delivering a cooling gas to said loadlock.

74. A method as in claim 73, wherein said venting gas comprises helium.

75. A method as in claim 72, wherein said cooling said substrate on said cooling plate, venting said loadlock, removing said processed substrate from said cooling plate, and removing said processed substrate from said loadlock through said first opening is carried out in a time of no greater than 60 seconds.

76. A method as in claim 72, further comprising heating said processed substrate in said loadlock prior to venting said loadlock.

77. A method as in claim 75, wherein said time is no greater than 30 seconds.

78. A method as in claim 77, wherein said unprocessed substrate is preheated in said loadlock prior to delivering said unprocessed substrate to a chamber outside of said loadlock, and said preheating is carried out in a time of no greater than 60 seconds.

79. A method as in claim 78, wherein said preheating is carried out in a time of no greater than 30 seconds.

80. A method as in claim 71, further comprising:

lowering said lower support structure relative to said first opening after removing said processed substrate from said loadlock through said first opening; and

aligning said upper support structure to accept an unprocessed substrate on upper support structure through said first opening.

81. A method as in claim 69, further comprising heating said unprocessed substrat in said loadlock.

82. A method as in claim 81, wherein said heating is carried out in a time of no greater than 60 seconds.

83. A method as in claim 81, wherein said heating is carried out for no greater than 30 seconds.

84. A method as in claim 71, wherein said cooling said substrate on said cooling plate includes positioning a second late above said substrate, said second plate positioned so that heat from said substrate is transferred to said second plate.

85. A method as in claim 84, wherein said second plate is positioned approximately 5 mm from said substrate.

86. A method as in claim 84, further comprising positioning at least one pin extending from said cooling plate to said middle plate.

87. A method as in claim 69, wherein said delivering said processed substrate from said chamber outside of said loadlock to said lower support structure is carried out prior to delivering said unprocessed substrate to said chamber outside of said loadlock.

88. A method as in claim 87, further comprising heating said unprocessed substrate in said loadlock prior to delivering said unprocessed substrate to a chamber outside of said loadlock.

89. A method as in claim 69, wherein said delivering said unprocessed substrate is carried out after said delivering said processed substrate.

90. A method for processing a substrate comprising:

delivering one unprocessed substrate from an unprocessed substrate supply to a first loadlock support structure using a first robot;

transferring said unprocessed substrate from said loadlock to a transfer chamber

using a second robot;

transferring said unprocessed substrat from said transfer chamb r to at least one processing chamber to process said unprocess d substrate to form a processed substrat ;

transferring said processed substrate from said at least one processing chamber to said transfer chamber;

transferring said processed substrate from said transfer chamber to a second loadlock support structure in said loadlock using said second robot;

transferring said processed substrate from said second loadlock support structure to a cooling plate in said loadlock;

cooling said processed substrate; and

removing said processed substrate from said loadlock using said first robot.

91. A method as in claim 90, further comprising heating said unprocessed substrate in said loadlock prior to transferring said unprocessed substrate from said loadlock to said transfer chamber.

92. A method as in claim 90, further comprising positioning a heater in said loadlock above said first loadlock support structure.

93. A method as in claim 90, wherein said cooling said processed substrate includes venting said loadlock prior to removing said processed substrate from said loadlock, said venting including introducing a gas comprising helium into said loadlock.

94. A method as in claim 90, further comprising positioning said first support structure above said second support structure in said loadlock.

95. A method for processing substrates comprising:

delivering a single unprocessed substrate to an upper support structure in said loadlock,

evacuating said loadlock;

delivering said single unprocessed substrate from said loadlock to said transfer chamber;

delivering a single processed substrat from a transfer chamber to a lower support

structure in said loadlock;

delivering said single processed substrate from said lower support structure to a cooling plate in said loadlock;

v nting said loadlock;

delivering said single processed substrate to a location external to said loadlock and said transfer chamber; and

delivering another single unprocessed substrate to said loadlock.

96. A method as in claim 95, further comprising heating said single unprocessed substrate in said loadlock prior to delivering said single unprocessed substrate to said transfer chamber.

97. A method as in claim 95, wherein said delivering said single processed substrate from said lower support structure to said cooling plate comprises lowering said lower support structure through said cooling plate and placing a lower surface of said single processed substrate onto an upper surface of said cooling plate.